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**Module 3: Respiratory YouTube Summary**

TB is also known as mycobacterium tuberculosis that causes infection in the lungs. This contagious illness starts in the lungs and travels to infect other organs of the body such as the kidneys and the brain through the lymph nodes and the blood stream. TB is one of the oldest diseases that has infected humans and continues to be one of the leading causes of infection and death in adults. There is a current vaccine for TB called BCG that stimulates the body's immune response to fight against the disease. The most affected countries in the world are Asia, Africa, and Western Pacific. TB is spread through sneezing, coughing, laughing and any other forced act by the respiratory system. In the 1950's antibiotics were produced that help fight TB, and even eliminate the disease in some countries. Unfortunately, many years later different forms of the illness produced and were resistant to antibiotics. There are risk factors for TB such as working, traveling, or living in areas of widespread TB, a weakened immune system. The signs and symptoms are different depending on the form of TB that person currently has. There are two types of TB: latent or active. Some of the symptoms of an individual with active TB are productive cough for 3 weeks or more, chest pain, poor appetite, weight loss, malaise, night sweats, swollen lymph nodes that are not tender, fever and chills, and coughing of blood. When first testing for TB a medical professional will inject Tuberculin fluid into the skin. The medical professional will be looking for the size of induration ranging from 5 to 15 mm. Confirmation from a positive skin test for TB include a chest x-ray, IGRA test, and a sputum examination. Treatment regimens for TB are PZA, RIF, EMB and INH. It is essential that the patient finishes their medication regimen as prescribed to avoid drug resistance.

COPD is chronic obstructive pulmonary disease. This term is used for two different types of lung diseases and is the 4<sup>th</sup> leading cause of death in the US. The two types of COPD are emphysema and chronic bronchitis. Emphysema causing changes in the alveoli walls, and chronic bronchitis causes changes in the air passages. There are changes in the respiratory track from the COPD such as: clogging of air passages from mucus, inflammation of the air passage walls, damage to the alveoli walls and alveoli losing their elasticity. The causes of COPD are smoking, second-hand smoke, inhalation of fumes/chemicals, air pollution, and genetics. Smoking is the number one cause of COPD. The signs and symptoms of COPD (often with the progression of the disease) persistent cough for 3 or more months, dyspnea, frequent respiratory infections, tightness in chest, wheezing and fatigue. The more advanced symptoms are difficulty catching your breath, fever, headaches, barrel chest, weight loss, lack of mental alertness, and clubbing in fingers and toes. The diagnosis of COPD is done through Spirometry, ABG test, chest CT and X-rays. There is treatment for this disease, even though it is not reversible, such as bronchodilators, inhaled steroids, combo inhalers, theophylline, oral steroids, antibiotics, supplemental oxygen, and phosphodiesterase inhibitors.

Sleep Apnea is when you stop breathing in your sleep due to an obstruction. The obstruction is caused by your tongue muscle falling back when you are sleeping, which causes the lungs to become compromised. There is a cycle of the oxygen in the body dropping which signals the brain that there is something wrong, which often results in the individual becoming aroused out state of sleep. The risk factors of sleep apnea are laying supine, REM sleep state, being male, obesity, race, nasal obstruction, age, and genetics. Women become more at risk for sleep apnea once they go through menopause.

Pneumonia is when the alveoli in the lungs become infected with pus and mucus. It is an illness that is easily overcome by healthy individuals but those that are very young, elderly, regular smokers, or immunocompromised will have a much harder time recovering from this illness. Pneumonia is classified by how it is acquired or certain medical conditions. Pneumonia that is classified by how it is acquired will have the following classification: hospital acquired, community acquired, ventilator acquired, opportunistic pneumonia, and aspiration pneumonia. The causes of pneumonia are virus often caused from severe influenza, bacteria caused by streptococcus, mycoplasma, and fungus. The signs and symptoms of pneumonia are different for every patient, but the most common symptoms are coughing with the production of sputum, fever and chills, shortness of breath, increased rate of breathing, chest pain, muscle pain, fatigue, diarrhea, nausea, vomiting, delirium, and cyanosis. Pneumonia is diagnosed through physical examination by using a stethoscope, sputum test, blood test, chest x-ray, CT scan, bronchoscopy, and pulse oximetry. Treatment for pneumonia starts with drawing blood cultures prior to administration of antibiotics to ensure that the type of pneumonia is known to avoid resistance to treatment. Antibiotics are used for bacterial pneumonia and Antivirals are used for viral pneumonia. There are complications that can arise from pneumonia such as lung abscess and bacteremia. There are ways to prevent pneumonia such as, hand hygiene, staying healthy and health diet with exercise, quitting smoking, and vaccination. The flu shot and pneumonia shot are recommended to help fight off the possibility of pneumonia. The ages for the pneumonia vaccine that are recommended are under the age of 2 and over the age of 65. It is also recommended that individuals that are immunocompromised should also consider getting these vaccines.

Chest Tube is a tube that is placed in the pleural space to remove air or fluid, which helps the lung. There is another type of chest tube that is inserted into the mediastinum space to drain fluid from around the heart after cardiac surgery. There are several reasons why someone may have a chest tube placed such as: pneumothorax, pleural effusion, hemothorax, empyema, chylothorax and cardiac surgery. There are two types of chest tube drainage: wet suction and dry suction. The wet suction works through regulating the height of the water in the control chamber. The dry suction works through there not being a water column but there is a suction monitor bellow that balances the wall suction. The most important nursing interventions are monitor the patient's drainage system and tubing, monitor the collection chamber, check the water seal chamber, drainage collection chamber and the suction control chamber, record all output in the drainage system, listen to chest sounds, watch for dyspnea, monitor insertion site, repositioning, and TCDB. It is stated that you should never milk or strip the tubing because of it increasing the pressure, if the system breaks get a new one, and always follow your hospital policies with clamping. When you are removing the chest tube you must teach the patient the Valsalva maneuver, pre-medicate for pain, place them in Semi Fowlers, monitor respiratory status and complete a chest x-ray.